Water Quality Standards Advisory Committee
Meeting Minutes

March 22, 2004

Members Present:

William Beckwith	US Environmental Protection Agency
Wendell Berry	NH Lakes Association
Steve Clifton	Consulting Engineers of NH
John Dreisig	NH Public Health – Risk Assessment
Robert Fawcett	NH Fish & Game
Donna Hanscom	NH Water Pollution Control Association
John Hodsdon	NH Farm Bureau
Ken Kimball	Appalachian Mountain Club
Vernon Lang	US Fish and Wildlife Service
Eileen Miller	NH Association of Conservation Districts
Carl Paulsen	NH Rivers Council
Peter Rice	NH Municipal Association
Marjory Swope	NH Association of Conservation Commission

Members Absent:

Michael Donahue	Business and Industry Association of NH
Tim Fortier	NH Travel Council
Ben Frost	NH Office of State Planning
Nancy Girard	Conservation Law Foundation
Bill McDowell	University of New Hampshire
David Miller	NH Water Works Association
Jason Stock	NH Timberland Owners Association

Others Present:

Chip Chesley	City of Concord
Neil Cheseldine	Wright-Pierce
Michael Giaimo	BIA Member
Randall Heglin	Town of Jaffrey
Allan Palmer	PSNH
Ronald Rayner	Environmental consultant/BIA member
Andrew Serell	Rath, Young & Pignatelli
William Schroeder	Canobie Lake Protection Association
Doug Starr	Town of Jaffrey
Anthony Zuena	SEA Consultants, Inc.
Victor Krea	Wright-Pierce

DES Staff Present:

Paul Currier	Administrator, Watershed Management Bureau
Bob Estabrook	Watershed Management Bureau
Gregg Comstock	Watershed Management Bureau
George Berlandi	NHDES
Marie LosKamp	Executive Secretary, Watershed Management Bureau

Introductions and acceptance of February 9, 2004 Draft Minutes

- **Marjory Swope, Chairperson, called the meeting to order, began with we can skip introductions and go on to acceptance of February 9th Meeting Minutes.**

- **Donna Hanscom made a Motion to accept minutes, motion seconded any questions? On page 1 Jasen Stock marked Here and Not Here, he was really here, came in late, so take him**

off from absent. Page 14 replace *fall* through with *follow* through. All in favor of the Minutes as Amended, say aye, any one opposed, Minutes of February 9th Meeting adopted as amended.

Revised Sediment Guidance, Paul Currier

Everyone had a copy of the draft language last time of the Sediment Guidance formerly known as the Sediment Policy. Comment from last meeting was to change the word policy to guidance. It hasn't changed from last meeting except the name. It is now called a guidance document not a policy document which was the recommendation.
Ron - Did you change the title relative to discussion with William Beckwith from EPA, is that in part why you changed the title?
Paul – Policies are not considered a good thing so the change is still recommended. It would apply where there is a need to interpret the narrative standings in order to make a decision on WQS, and that is all the cases in which the guidance was used.
Mike Giaimo – Has the AG gotten back to you on whether it is a guidance now and not a policy?
Paul – No, it is still in house with our legal unit.

Revised Draft Rule Language – 2 ½ pages

Marjory Swope – Any comments on turbidity?
Steve Clifton – Define distance.
Paul – I think we thought that was something that didn't need a definition.
Steve – If they go downstream or upstream far enough they can reach turbidity.
Paul – You would want to be one foot upstream perpendicular of the control.
Steve Clifton - It would be difficult for contractors to achieve.
Robert Estabrook - You would want to be as close to the situation as you can be but not in it.
We are not changing the standard. It has always been in our rules.
Paul – Steve, should we define upstream?
Steve- No, it is just a question that comes up.
Anthony Zuena – I have questions regarding the strict interpretation of nutrients. Section 1703 is in conflict with Section 1708. The nutrient provision I see as a road block to the antidegradation that is allowed under Section 1708.12. We couldn't get to the game because of the nutrient provision.
Paul – We would have to make a determination of cultural eutrophication. That antidegradation refers to waters with higher water quality than the standard. It is the standard antidegradation that would not apply to a case where the narrative standard would require treatment of existing discharges. In fact there is a parallel in the legislation in the Class A standards that says no discharge of sewerage or waste to Class A waters.
Anthony – It couldn't be done arbitrarily.
Paul - Since we haven't defined how we make that determination, we need to take the arbitration factor out. What we said was we had to come up with a procedure and we were thinking in terms of (c) rather than (e) for non point sources.
John Hodsdon – Prohibit in lakes and ponds?
Paul – Whether or not BMPs, and whether or not the nonpoint source was contributing to cultural eutrophication.
John – Even if result of development was cultural eutrophication and reduced because of having BMPs?
Paul - The difficulty is in defining cultural eutrophication. The standard has been violated for a designated use. Cultural eutrophication as a result of human activity but not to the point where a designated use such as recreational use or aquatic life is supported.

Marjory – We had a big go around before regarding this.
Donna Hanscom – There is nothing in here about cultural eutrophication.
Paul - No and not until we have tried it out.
Marjory – There shall be no new discharge, people that were opposed could use that clause, any new or increased discharge.
Paul - Then we would use our procedure BMP applied to whatever is going on. New house, new septic, nonpoint source, discharge, develop lawn, if there were BMPs in place then septic meets state standards that would satisfy the BMP requirement.
John – The way I read it, originally concerned about farms that had neighbors that were concerned about odor or noise. I see it as a way to harass the farmer, on a per acre basis the neighbors would be producing greater cultural eutrophication assuming the farmer was using BMPs.
Marjory - Your language assumes you are using BMPs but (e) doesn't.
Vern - In (e) wouldn't it depend on the size of the watershed, if you have a bigger watershed with only a few new, seems like (e) depends on intensity of watershed.
Paul – Maine uses that to see if development in lakes or ponds would be allowed. The application of BMPs can be evaluated and is somewhere in between. In (e) there shall be no new or increased discharge of phosphorus to lakes or ponds. That could be used to prevent new development. The idea is through this BMP idea to make that interpretation no longer possible.
Ken – The terms cultural eutrophication and BMPs are both ambiguous, you are opening the doors for a legal challenge. It is still going to be subjective but at least you are trying.
Paul - Do not change the words at all?
Ken – Did you not hear what I have said?
Bob Estabrook – It has been in our rules for years, the term cultural eutrophication.
Donna Hanscom – If you are going to make allowances for non point discharges…
Anthony Zuena – This provision from the very beginning was what prevented Salem from transferring water. Any transfer containing any amount of phosphorus was not allowed. So unless this gets changed, it will never get the transfer of water.
William Schroeder – Those were the words, Class A was the problem, and it appears that Class A is the barrier to transfer. No transfer of phosphorus. The only way was if it changed to a Class B. Cultural eutrophication the discussion was if one iota it would contribute to cultural eutrophication of phosphorus or nitrogen. It has to have some number below that number that would make it okay.
Paul – Parallel to other things in Class A that was soundly defeated at the last meeting. We do have an internal legal review which basically directs us to do more work first. Our legal unit says the issue is unless naturally occurring, since language occurs in Rules not Statute then the fix is a Rule change not a legislative change. We have been over it before, there are two ways to change Rules in the context of the present law, and one is to revise the definition of naturally occurring. Second, as we proposed to create an exception to naturally occurring by Rule in which water transfers would be allowed. Big flaw we exempted water transfers from Class A. If you are a water transfer you can go. Recommends that we work harder at Rule changes to do this, we select one of the two possibilities to work on.
John Hodsdon – If water being transferred has a lower concentration of phosphorus than the receiving water it would be diluting phosphorus in receiving water.
Paul - Unless it is naturally occurring, it doesn't change that language.
William Beckwith – Have you explored that if you maintain natural that the intent, the spirit of not unless naturally occurring…
Paul – We can apply quantitatively to a water transfer; apply quantitative thresholds to other discharges in watershed. We have talked about it internally, and there is no easy way to do that.
William Schroeder – It is not like a chemical concentration, gets taken up by biotic life and increases eutrophication of the lake.

Paul – It is a loading issue. A transfer would be loading.
John – The same as for phosphorus but not the same for nitrogen.
Paul - Nitrogen doesn't cause eutrophication but is one of the parameters that are unless naturally occurring.
Anthony Zuena – Your summarized internal legal review you need to do, meaning you and your staff needs to explore item 3b, the whole point of debate around item (e) and water transfers hinges on that discussion.
Paul - What we would like from committee, the easiest one for us to do would be create language that is only slightly less restrictive than Class A other than naturally occurring**.**

- ***Marjory – DES staff thinks that 3b is the easiest route, what do the rest of you think?***

- **William Schroeder – I cannot give direction, take it back and work on it and give us suggestions for next time, if I have any ideas I will e-mail you.**

Marjory - Revise naturally occurring which to me is not a good approach. Any exceptions?
Paul – Naturally occurring is hard to apply. Most waterbodies don't have natural occurring. If you use the definition in the absence of human influence, human influences do have an effect on those parameters.
John - Not just talking about Midwest impact.
Paul – What would you measure for if no human activity at all?
Marjory –Most watersheds have human influence and are not naturally occurring. Are you suggestion a combination of a & b?
Paul – One possibility would be to take naturally occurring out.
Marjory - Completely out and put in ambient?
George Berlandi to William Beckwith – Would EPA require a use attainability analysis for each body of water?
William Beckwith – No, EPA would not do use attainability analysis.
George - Just revise and we still have Class A & B?
William - If that was significant enough. I do think you should be looking at a subclass and not be scared of the use attainability. All of these proposals seem to be lowering protection for all waters that are Class A. Class A has been set up with the idea of providing the highest protection as could be obtained for the highest quality of waters; it seems 180 degrees to the other state programs to protect water supplies. In the case of Canobie Lake that you cannot obtain Class A there, you could lower it to something that is attainable there. To wholesale reduce your protection for a couple of water supplies is not good.
Wendell – Are there ways we can transfer water into Class B waters and do you have standards for doing that?
William – The mechanics for it are, if it is a Class B waterbody, if it is and if you want to transfer, you have to go through public process to make it a Class B, downgrading isn't just the public process where the public decides they want to downgrade. First the test is whether the uses in the existing use class that the waterbody is classified under are attainable. If they are attainable after a structured scientific analysis and you cannot satisfy more of the six criteria for lowering the use, you cannot lower the use. If all the public opinion still wanting to do it really isn't just a matter of okay then we will do it. The system is followed the way it is regulatory or statutory written. The system is intended to try to maintain higher water quality where that is possible. It is not supposed to be easy to lower. All Class A lakes and waterbodies we want to be at the highest quality, it is not appropriate to transfer water into them, if that is not what you want then change the class.
Paul – I guess what we would like to do is go back to the draft that was discussed last time, which doesn't create an official subclass but it creates an exception for water transfers and to

focus the discussion on having created that exception what else do we put in place of the unless naturally occurring language so that the Class A character of the waterbodies to which water is transferred is adequately protected.
William – So you are saying that for all other purposes the water quality of your ambient water, independent of activities, is to be as naturally occurring but for a transfer it wouldn't have to be as naturally occurring?
Paul – That is right.
William – The quality of the water being transferred or the ambient water quality of the body receiving the water. You can't have one standard for the waterbody at large, that says that is naturally occurring and another standard that says you don't have to meet naturally occurring. Which applies? Obviously you can't have two standards.
Paul - Ambient standards.
William – If you have a standard that says as naturally occurs and that is applicable to the waterbody, it is. These are WQS that is for the ambient water regardless of what activity, it is what the ambient water is to meet. Discharge prohibitions really aren't in themselves water quality standards. If you want to allow discharges that will still meet ambient standards that is fine, but having an ambient standard that somehow is applicable when a particular activity is going on when independent you still have a fully enforceable standard that says as naturally occurring is to be met in that waterbody at large is an ambiguous situation that you need to avoid.
Paul – Right and recognizing that we already have an ambiguous situation in that the standard is probably violated in our Class A waterbodies anyway.
William – That is different. That is an attainment issue of a water quality standard that isn't in doubt. There are all sorts of situations regardless of the use classification in all our states, where the use class and criteria assigned to them aren't attained. That doesn't affect the interpretation of what is supposed to be attained, but an ambient standard on one hand says the water is to be as naturally occurs and then some provision that says unless you are transferring water to that water body then that is not the case, but you have all these other activities that are still supposed to be managed as naturally occurs creates an ambiguity as to how you determine what the actual requirement is for that water.
Paul – That is what we are proposing. The idea would be that ambient standard would be different if there is a water transfer.
William – One standard says this water shall be zero phosphorus and another standard says this water shall be 10mg per liter of phosphorus that needs to be met in the ambient water at large, which one?
Paul – The idea would be to create a subclass of Class A for waterbodies to which water is transferred in which the standard would be different than as naturally occurs.
William – Well a subclass is one thing. What I thought this kicks off is the most recent part of the discussion as you saying go away from the subclass and having an exemption back to the exemption language within the class for transfers.
Paul – Yes, effectively creating a subclass but by exemption with additional provisions.
Ken – That still begs the question, if you had a Class A waterbody and lets say it was currently only meeting Class C standards, even though it is classified as A, by using the term ambient you would essentially be saying what is acceptable is those Class C standards.
Paul – No.
Ken – Ambient says it is the existing occurring.
Paul – Ambient says it is as measured in the waterbody in its existing state. All the WQS applies to the ambient condition.
Ken – 150 mg per liter of phosphorus in it today and it is Class A, basically what you are saying is you would accept 150 mg per liter.
Paul – No, it is the standard for what is in it. The standards are the standards for the water in the ambient condition. Ambient condition is out there in the environment as it is in the environment.

If you have a standard, DO not less than 5 mg per liter. That is the standard as measured in the waterbody, not as measured somewhere else, not as measured in a discharge, not as measured after treatment, as measured in the waterbody. If that standard is not met, then there is a violation.

Ken – The second complication that I would see come up is if you are using ambient because many of these concentrations fluctuate over a season, what are you going to pick as the ambient value? What your standards do now is basically say here is the bottom line and you cannot go above the bottom line. Whereas if you are using an ambient standard in the spring the lakes have turn over and using phosphorus as an example it is going to move up and down.

Paul – For each standard and it is not necessarily written in the Rules, you will find the coordinated assessment listing methodology you will find that the measurement process for those standards takes into account seasonality when seasonality is important. In some cases we are using an index period, we measure only during that index period differences. In come cases we have differences say between winter and summer where it is considered to be important. That is not necessarily all in the Rules, but if you take Rules and you take the sampling methods for determining whether or not those Rules are complied with you will come up with seasonality, whatever it is when that is considered to be important.

John Dreisig – When you are transferring water from Class B into Class A the concern is that if you make an exception you are really only needing this for a small number or small percentage of situation, is that the case?

Paul – Yes, 11.

John Dreisig – Then if that is true, what I hear on the other side is that there are concerns that if you are making those exceptions how many times are we going to have to make it and what kind of precedence are we setting. Wouldn't it seem like you need some type of a mechanism in place to establish that you have the need, that there is something on the other side that says we are running out of water here at Canobie and people cannot get enough water to drink, so we need to do this. That is like an obviously pending need that seems like you create an argument that this isn't just an everyday situation. Wouldn't you want to have that kind of a mechanism in place to just say if you have situation a b c d, we will make it a little easier on you for purposes that people do not die of thirst.

Paul - That exists under the antidegradation process. Demonstration of need is not required for an NHDES permit in general, but the demonstration of need is incorporated into the antidegradation process in the WQS, in which if there is a proposed degradation of water quality in a waterbody where the water quality exceeds standards, then antidegradation review would evaluate the social and economic justification versus the proposed degradation.

John Dreisig – Does that process come after these Rules or is that set up front?

Paul – The antidegradation process is in Rules now.

John Dreisig – So in other words it is not like this one set of Rules supercedes the others, they go in tandem?

Paul – Right. Basically there are three components of WQS, the designated uses, the criteria to support the uses, and the antidegradation process. We are talking right now about criteria to support the uses.

William Schroeder – If you create a new class, Class A1, who determines or how is it determined that lakes get put in that class? The current classes I think are determined by legislative action. Who determines that this bunch of lakes and streams can be put into Class A1 waters, and isn't there some need for some establishment of need before you do that.

Paul – I think the answer is only the legislature can create classifications or sub-classifications, the agency can write Rules to elaborate on the legislative intent for the protection of the quality in those classifications. We have done that. We, the agency, at some time in the past and it is a fairly long past, put the 'not unless naturally occurring' language in the Rules to fulfill the legislative intent of Class A as we interpreted it. We have the ability to change that within our

ability to administer the Statute. We could not create a classification. It is possible we could create an exception for water transfers but I think Bill is right we are stretching it at that point. We are creating kind of a sub-class but we are not.
Carl Paulsen – What are we doing? What is it we are talking about doing at this point?
Paul – We are brainstorming.
Carl Paulsen – One of the questions that came to mind was that if you did have these two different standards then presumably antidegradation wouldn't apply to water transfers that met this particular standard.
Paul - Antidegradation always applies. There are three separate components. Antidegradation review is always a component of any proposed discharge. It just is. The criteria are the other component and designated uses. Antidegradation review always kicks in for a proposed discharge. Now there is significant and insignificant discharges for the purposes of review and you can read all that in the Rules. There is nothing that you can do in creating a narrative or a numeric water quality standard that will supercede or circumvent antidegradation.

- **Paul - We will have internal discussions and come back to the committee again with some different ideas on water transfers.**

Marjory - What we need to talk about now is the **Wright-Pierce Letter**.

Victor Krea – The last meeting and then the proposed changes as the result of the last meeting, it was specific to toxics and in fact it only included toxics and we had been under the impression that it was going to include more than toxics. The way it is written it excludes everything but toxics. That concerned us so we wrote a letter to Paul basically to get the DO criteria and everything that was in toxics back on the table again, back into discussion again. It slipped by us and we didn't realize that was not covered until very late in the meeting.
Paul – DO has been in there in previous versions and we were okay with that, so I think we are okay with DO being in there. A flow dependent modeling for dissolved oxygen would be okay with us.
Victor - We thought it was but just the way it was written, it surprised us.
Marjory – Paul you are going to amend it to say specifically that it is in there?
Paul – YES.
Andrew Serell – I wrote a letter also supporting Wright-Pierce's comment. The only other thing, what I thought was a relatively minor comment, was that modeling, depending on the parameter that you are modeling for, can include things other than just flow. Some parameters are dependent on the age, some are dependent on hardness, so my only suggestion was in the sentence that reads, the last sentence in the new subsection (d) that reads *a time dependent modeling method is one in which* then you list various things that may vary. I propose simply adding a list of those and/or other model input parameters. So that it would read, *a time dependent modeling method is one in which discharge flow, discharge pollutant concentrations, receiving water flow, receiving water pollutant concentrations and/or other model input parameters may vary with time.* The intent is to recognize that time dependent modeling can put out things other than pollutants and flows; there are other parameters that can vary as well with such a model. Sent out by e-mail to the group, and I have extra copies for those who didn't get it. I sent it out Friday by e-mail.
Marjory – Any comments?
George Berlandi – Actually on both letters. Both letters seem to indicate that the way we presently calculate permit limits, we are overly conservative. The only thing that I can see where we are overly conservative is when we use the design flow for a wastewater treatment plant rather than the actual flow. Is there anything other than that that you think we are overly conservative on?

Andrew Serell – 7Q10. I would say just by allowing only steady state modeling which is in and of itself overly conservative.
George Berlandi – When you say we are overly conservative, and somebody suggested that, why don't we use a different treatment plant flow, because the reality is most summers people don't reach their design flow during their low flow period. I understand that. That level of safety factor, if we were to take that level of safety factor out, there is no other safety factor. Right now we use zero for background concentrations of any toxic pollutants. We don't have any biomonitoring data in the stream. We don't have any sediment data in the stream. We don't do any fate and transport modeling. We don't look at effluent variability of the parameters that you are presently discharging. We assume we give you the full credit of the mixing zone, 90 percent of the assets of the stream, and the reality is no one is mixing to that extent. We don't do nutrients, although we will be presently. The issue of the 7Q10, it is not conservative, it just isn't. EPA has developed something called the D flow model. What it basically does is after everything is said and done it tries to give you an equivalent flow instream that would correlate these acute and chronic criteria, which would be one exceedence one day every 3 years and one four day exceedence every 3 years. I ran some numbers. What we did is we took the model, we took the D flow and we actually tried to run some data to see how it would work out. We took the gage in Jaffrey, we took the full period of record, and the 7Q10 at the gage is 7cfs. What we did is we calculated equivalent chronic criteria of what would be the equivalent flow that would allow one four day exceedence every three years. That comes out to 2.75cfs, almost a 1/3 of what the 7Q10 is. We did the same thing to the 1 flow, one exceedence every three years, and we came out with that flow would have to be 1½ cfs. Again not the 7Q10, not 7cfs. I have no problems with dynamic modeling. I think it is probably a better way to go than our steady state. I am concerned that the scenarios being proposed or thought of, that are in the correspondence - I am concerned that they have nothing to do with dynamic modeling; it is just a game of numbers. It is a game of numbers where you say okay instead of the 7Q10 flow of 7 George we are going to use 12 or we will use 14 or we will use 3 and we are going to have a series of treatment plant flows with a series of river flows. I am suggesting to everybody here that has nothing to do with dynamic modeling, and that has nothing to do with what's going on in the river all the time with the effluent. We don't have the safety factors that a lot of people in here think we do. It bothers me to say okay because you have that one safety factor of flow George, we are going to pull that away from you and supposedly we will leave everything else the way it is. I am saying we are not at a stage to change anything drastically to what some of the proposals that I hear are and still believe that water quality standards will be met. I haven't seen any data from anybody that indicates that we are. I understand the concerns with wastewater treatment plants, I understand the concerns with money, and I understand why you are presenting these things. It is just that if we are trying to meet water quality standards then we have got to stay focused on whatever you do present. You have to supply us with the information of the modeling and whatever that is when you finish whatever scenarios you have that you are going to meet WQS. It isn't just a game of dilution and numbers.
Victor Krea – On behalf of Jaffrey, the reason we proposed alternatives to the flow by dynamic modeling is because to us it is even cleaner. The 7Q10 in Jaffrey is 3.33 cfs. One of our possible alternatives is a separate summer/winter 7Q10. The winter 7Q10 which we calculated, and then was confirmed by DES, is over 3 times the summer 7Q10 which makes a world of difference in the treatment limits for the winter and in the size and cost of the treatment plant that the town must put in to meet the limits. Another possible alternative is in Jaffrey we have the luxury of storage, so we don't have to discharge at the 7Q10 flow, we can hold our waste water to some river flow considerably higher than 7Q10 flow, and for the life of me I can't see why that is such a problem.
George Berlandi – We have talked about it. There are two things, number one if we are going to stay with the terminology of 7Q10 you really can't have a winter and a summer 7Q10. Not

literally. But the other thing is what you are proposing in Jaffrey's case or in anybody's case, what you are proposing is to increase the amount of pollutants that are going into the waterbody on an annual basis. I am not the final say in it, we have gone around and around, I just don't agree with it, we don't have enough data, we don't do enough sampling (chemical, biological or any type of sampling) in our rivers and streams for me to sit here (or anybody I believe) and have confidence and say we have so much capacity we can back off a little bit. I don't believe it is the right time for the department to back off a little bit. I believe that it is sending the wrong message, and it isn't just Jaffrey, it isn't just that, it is everybody; and once we open the door then everybody has a right to the same things we give these towns. And I don't think we have the data that makes us feel any level of comfort that says yeah we can do this, we can allow more pollutants. Not only do I think we don't have the data, I think it is wrong. I think it is inherently wrong that we are going to turn this program around and allow more pollutants than we presently do. I always thought that the goal of CWA and DES was to make our waters cleaner, and this is not going to do it. Ultimately we are supposed to go to zero discharge. We may never see it, in this room, probably we won't, but the idea to all of a sudden turn around and go 180 degrees from that, for any reason, I just think it is a big mistake.

Victor Krea – But it is happening in other areas George and it is happening because of the economics. The wastewater blending move, for example, is an example of putting more pollutants in and it is endorsed by EPA, etc.

George Berlandi – The wastewater blending rule is only for wet weather flows. It still has to meet permit limits when that blend is made. I understand that other states are doing it but I just don't think it is the right thing to do. I never will. That doesn't mean that we aren't going to do it. I am just speaking my mind. I don't know how it will end, but you do have a right to a decision.

Paul Currier – We have talked about this internally as well, and my point of view is that it is important to separate the issue of whether or not a particular situation will meet WQS, which are concentration based and antidegradation review. The issue of additional loading to a stream or a waterbody is an antidegradation question and ought to receive full public scrutiny before additional loading is allowed for any permitted discharge. The forum for that is antidegradation review. The problem is that we have never threshed out the process for full public forum for antidegradation review because up to know we really haven't needed to, so we are in uncharted territory. It is a big issue. George is absolutely right what the CWA says. You are not supposed to backslide. If you have a high quality water, you are not supposed to degrade that waterbody unless there is social and economic justification and EPA has guidance in which there are fairly stringent criteria for social and economic justification...

Vern – On the point that George was making, at least for communities that discharge in the Connecticut River basin, isn't there a TMDL for nutrients for Long Island Sound that is supposed to be cranking the numbers down.

Paul – For nitrogen delivered to Long Island Sound that is a case where we have a downstream waterbody, Long Island Sound, that will at some point affect nitrogen discharges in the whole watershed, Massachusetts, New Hampshire and Vermont. That says nothing about the water quality relative to nutrient standards in the Connecticut River itself or any of the other waterbodies in the upper watershed. Yes that will happen.

Vern – Is that the only way we would have an upper limit on it then on what can be discharged? That is against the issue that I see here where the proposal is then advanced is that if you keep allowing people to pick and choose what flows that they have to meet the concentration standards at, conceivably you can go pretty high up.

Paul Currier – Don't forget the concentration standard, and I'll talk about toxics. The concentration standard for toxics is no more than so many exceedences for so many days on average; that is the criteria and it doesn't say anything about flow. It is a concentration criteria and the question is how can that criteria be met? The modeling, any modeling that is done, any

discharge scenarios in association with modeling answer that question: is the standard met, are the toxic criteria exceedences limited to the statistic, the required amount or less. That is the issue and that says nothing about flow.

William Beckwith – Yes it does, meeting those duration and frequency components do. And before we get too far away from the beginning of George's presentation conservancy vs. not permit writing. His comparison of 7Q10, which are "biologically based flows of 4D3 and 1B3" was NH's example of the calculation that is talked about in the appendix to the WQS with the technical support guidance document for water quality based permitting that shows for the Jaffrey case that when you apply the criteria at 7Q10 you are not meeting the duration and frequency components of those criteria. In fact the steady state modeling doesn't analyze that, we use default design flows to apply those criteria with the presumption that we are being protective because there is variability for natural systems and the agency has shown on stream studies that lots of time you are more or less protective in using those default values. The intent of the 4B3 and 1B3 values as a recommendation is to try to better accommodate exactly those duration and frequency of exceedence allowances in the calculations for design flow. In the Jaffrey example he is showing that if you use a higher flow, well at 7Q10 you are not meeting those components, all of the things, other assumptions being correct about what is going on. The higher flows you are not going to meet those assumptions either, you are just going to compound the issue. That is just a calculation there that is in fact some analysis of whether or not the duration and frequency components are going to be met. When you do try dynamic modeling, you would be modeling with inputs that will tell me what meets the duration and frequency components, when you do this stepped steady state modeling it is only dynamic by the virtue that you are changing your steady state inputs from one steady state calculation to another. It is not analyzing those duration and frequency components.

Victor Krea – But wouldn't those tiers, the way they were set guarantee that you never exceed criterion that is how it would be established?

William Beckwith – I am saying the way the tier is set at the lowest tier right now, 7Q10 is not guaranteed.

Victor Krea – That is not what I am saying. These tiered limits where you agree not to discharge below certain river flows or your limits are established for certain tiers of river flow that can calculate that if you are not at that overload concentration, you do not exceed water quality criteria.

William Beckwith – Well we are mixing and matching a little bit. The issue of saying I won't discharge until a certain flow. What safety does that provides for flows below that and the issue of well we will discharge at any flow that as flows increase we get less stringent limits are different ball games. With regard to what has primarily been the topic here, what if we have an increase in discharge limits with an increase in flows. What I am saying is that bottom tier for Jaffrey right now arguably does not meet NH standards as written even though we probably all continue to accept it. So if you just build tiers on there you would be compounding that issue. If you just keep one tier where they can discharge at any flow but increase the flow that you apply those limits at you would be compounding the issue. That is an important point to understand regardless of what you suggest, given your needs and stuff you believe, that your intent is still to try to make sure that the state standards are met.

Andrew Serell – I think we are making this a little more complicated than it needs to be. As Paul points out, the bottom line criteria are that WQS need to be met. Right now DES has a particular modeling method that they mandate in order to demonstrate that those criteria are met. All that this proposed modification does is to allow other means to demonstrate that those criteria are met. The permittee provides a particular model to demonstrate that these criteria are met and if DES thinks it doesn't establish that WQS are met because some of these default mechanisms are no longer in there, then they can reject the model. This merely provides another option for permittees to provide a model in a effort to show that the criteria are met. Ultimately DES can

say they agree or don't agree that criteria are going to be met at the appropriate duration and frequency requirements. There is no way to break it down more specifically because there are a whole range of models that are out there and some may have more complexity than others. This is, in my view, just providing another option and in any given case the permittee might submit data and say this is our model and this is why we think this particular output is going to meet WQS, and DES will look at it critically and either say yes we agree it does or no we think it is too loose and there are too many assumptions based and therefore it is not met. I think it is merely to provide DES with permit flexibility and the permittee with greater flexibility and the burden is going to be on the permittee to establish that its model protects WQS.

Donna Hanscom –I think my point is, and Drew also brought it up, that we all need to have as many tools as we can to balance water quality protection with the need for cost effective treatment. As Water Pollution Control Association, there isn't a person that I represent who doesn't believe that we ought to be protecting water quality and there isn't a person who I represent who would not stand up in front of a legislative group and say if this is going to protect water quality we should be doing it. On the other hand, the same group has to be balancing off the needs of the people who are living, the riparians living in that community, and be able to look them in the eye and say, *you know what, this is as good as it gets, you have to do this*. The only way I think as a group we can make those assurances is to know that we have all the tools in the tool box that are available to try to make that case. Drew said you can either accept the case or not accept the case, but at least having some of these language changes allows the opportunity to make that choice.

George Berlandi – The tools that we have historically talked about is the dynamic modeling or the steady state, because EPA's technical support doctrine specifically mentions those 2 ways of calculating permit limits. I don't have a problem with that. What I am concerned about is these other scenarios have absolutely nothing to do with dynamic modeling. It is a variation of a steady state model where you allow three river flows and three treatment plant flows and then somebody throws in and says well it has got to be dynamic. I am saying it is not dynamic at all. It is just a series of numbers and that concerns me. That has nothing to do with, it probably has less to do with what is going on out there than the way we are presently doing it. It bothers me Donna. Whether you call it time dependent or call it something else, it isn't dynamic in any manner, shape or form. To me it is just confusing. I am saying, wait a minute that is not dynamic, and it is a game of numbers. We can all sit down and I don't know how you would model it because I am not aware of any models that actually do it. I am not opposed to the dynamic modeling that EPA talks about.

Marjory Swope - This isn't it, is that what you are saying?

George – Yes, the scenario that we are hearing has nothing to do with dynamic modeling at all.

Marjory –What you were talking about is different levels of flow and therefore….

Paul – I think that is what we are talking about, George is right, and I think Bill brought this up last time, if you read the technical support document, their version of dynamic modeling is a fully time dependent model that results in discharge permit limits that do not vary with time.

Victor Krea – Bill, is it possible that the model definition came about because 99 of 100 treatment plants, whatever comes in the front door has to go out the pipe and they don't have the ability to control that sort of flow to modulate it with a basic river flow.

Bill Beckwith – Well I think it is most because it has to do with assessing limits that will ensure that the magnitude component of the criteria, what most people call the criteria, is not met, not exceeded too frequently too long. I don't know how you are going to go about assessing that issue with these tiered steady state analyses and show that you are meeting that component when the bottom rung right know has been shown probably does not meet the duration and frequency components.

Victor Krea – I think the bottom rung right now, basically the flow goes out regardless of what river flow is.

Bill - If you want to hold flow and only discharge at higher flows, that is another issue. The modeling of whether you would meet criteria at flows higher when you are discharging would be the same kind of modeling.
Victor Krea – I think we have been, but if that is the case, what we have been putting forward is controlling the effluent flow from the plant based on conditions in the river or pollutant concentrations.
Bill – EPA's recommendations about dynamic modeling, that it is a modeling technique that isn't saying that somebody can or cannot hold flow and just discharge half the year or at flows above whatever that is another issue. Even in that scenario you say well some flow that is 6 times 7Q10 that at flows below that we won't discharge. In analyzing what permit limits would meet the criteria and the duration and frequency components for that part of the hydrograph when you are going to be discharging, the same kind of analysis would apply.
Victor Krea – Presumably the limits would be set.
Bill - I don't know and to me that is another issue. For a low flow stream where people are bound, I am not sure that necessarily should be immediately viewed as a bad situation.
Paul – Keene and Jaffrey are the cases that are most immediate. Perhaps we ask Keene and Jaffrey and perhaps Rochester to work with us to develop scenarios for those particular situations for the committee. We seem to be talking in the abstract in some cases.
Victor Krea – I agree with what you said Paul, though I would like to just mention that it is really what we have been asking for a better part of a year. We have never called it dynamic modeling, we never asked for higher permit limits as the river flow goes higher, what we have asked for is, if we don't discharge when the river gets below this flow, what will our permit limits be and that has raised a major problem within DES until right now.
Paul – The idea of these words is that you can create modeling scenario in which any one of the components in here vary with time and if you have engineering controls in which you can say we can vary our flow with time then you are allowed to make that assumption in the model. Maybe we should put together some more concrete scenarios.
Marjory – So as a way of getting off this piece of topic, you are going to work with Rochester, Keene and Jaffrey.
Paul – Well we can separate out this piece as a discrete piece and move it forward with rule making.
John Hodsdon – I am essentially hearing two different things here that need to be resolved. I hear George saying that this change would result in an unacceptable increase in pollution which would presumably be either public health or environmental damage from that and I hear Jaffrey saying the exact opposite that it would decrease the damage from pollution or discharge of toxics and nutrients if it is done in this other manner. I think it should be resolved somewhere along the line.
Paul – I think you are mixing the issue of concentration and loading John. They are two separate issues in the standards. If the concentration standard is met then the aquatic environment is protected; that is true for toxics, dissolved oxygen, whatever it is that is the purpose of the standard. It is possible that the concentration standard could be met and there could be an increase in loading based on a new permit. If there is an increase in loading that would be degradation. There would be a water quality that is now fairly high which would be taken down an increment by that increase in loading. That would be the subject of an antidegradation review. Water quality standards would still be met, all of the designated uses would still be protected, water quality that is higher than necessary to protect the designated uses would become somewhat lower and that is what antidegradation is all about. So the two processes are separate and both would go forward in any permit review under these new rules.
Victor Krea – Paul can I just clarify on Jaffrey's behalf we are not talking about decreasing current treatment levels to further decrease water quality. They are a plant that is out of compliance. It is not like they have treated to a certain level and we are going to turn some

portions of the treatment off and allow the effluent to go out dirtier - that is not the case. What we are trying to avoid is the very costly upgrade to meet more stringent limits that are required by the permit now that aren't currently being met.
Comment – And it is a multimillion dollar issue to a town of 5,000 people.
Paul – And the issue is copper and copper toxicity in the aquatic environment.

- **Marjory** – So, where are we going with this, you will meet with these guys in between and bring something back next time, is that correct?
- **Paul –** I guess so.

Andrew Serell – I am a little confused too. Maybe I need to think about it and we have a proposal and I don't know whether ideas that we want to change additional wording in the proposal that is there now or I am not really sure what.

- **Marjory** – I am not sure either, but that is why I like Paul's idea of going away and getting together with Jaffrey and then come back to the committee.

Steve Clifton – We all hear different things, and I am hearing something a little different too. Maybe this would get right to the point. Would EPA require dynamic modeling in the future? I guess override the state's water quality standards for 7Q10 steady state and require dynamic modeling in the future? Because what I am hearing is that the 7Q10 isn't as restrictive as dynamic modeling. If we go toward dynamic modeling the limits will become more stringent. I am hearing it on that level.
Bill Beckwith – In the absolute in the first part of your question, no I don't think you will find EPA demanding that the state do dynamic modeling as opposed to applying say 7Q10, 1Q10, or trying to compute respectively the steady state analyses. But what you are hearing and it is going to vary with flow regime and the balance between effluent and ambient water, but there are cases where the dynamic modeling are expected to yield more stringent limits than steady state because it is looking at the issue of not just meeting the magnitude of the duration and frequency components and this steady state application isn't always cutting it. The more the effluent plays a major role in what the instream conditions are in low flow conditions, low dilution situations, the higher the likelihood that the dynamic analysis could yield more stringent criteria. To clarify that by dynamic I mean something that looks at the variability of the various input parameters and gives you a set of limits designed to meet the criteria, not a set of steady state analyses that haven't been assimilated to give you a joint probability of whether or not criteria will be met.
Andrew Serell – I believe, I am almost certain, that EPA guidance document indicates that dynamic modeling more often than not will yield less restrictive permit limits than a steady state model.
Bill – I think that is probably true because more often than not we are not in zero dilution, dilution in factor of 2 situations, but in a lot of the situations that are really critical to people with regard to the situation where you have a problem meeting permit limits of this magnitude, you might find a different story.
Andrew Serell – More often than not it yields less stringent limits.

- **Paul -** Let us consult with Rochester, Keene and Jaffrey and we will come back.

Marjory – I think where we are is **Water Quality Assessments Presentation**.
Paul – Do we want to do this? Maybe we can postpone that to next meeting?
William Schroeder – In the revised rules, there is a 3 page hand out that relates to 1705 relative to application criteria for toxic substances. There is a part (a) and (b) that talks about acute aquatic life criteria and chronic aquatic life criteria and those two because they are bold I assume

they are new for being added. I got a little confused by that and I think that it is because the wording is slightly confusing and that is why I want to raise it. It says that I think for example that acute aquatic life criteria for chloride in the water is like one hour, not one day, and I think the meaning here is that if you say that the acute criteria is a level above 800 parts per whatever it is for an hour then the second question is okay if that is the acute life criteria how often can you exceed it, never ever no matter what or once in every three years or what. I think that is the meaning of the second part of this, shall not be exceeded for more than one day in every three years. That is the meanings. Then part (b) here is where it gets confusing, because then it talks about chronic aquatic life criteria shall not be exceeded for more than four consecutive days in every three years on average. I think what they really mean is one time in every three. The usual chronic criteria is for four days so if you exceed the chronic level for four consecutive days you have an occurrence and we want no more than one occurrence every three years.
George Berlandi – I think if you just put the word *once* between *days* and *in* it would read better.
Bill Beckwith – Write it the way our criteria is, it's four days on average once every three years on average. Get the words to line up with EPA wording. Use same language as EPA.

- **Marjory –** So you are going to revise that to make it line up with EPA's words.
- **Paul –** Yes and I am not sure about the one hour but it is once in every 3 years.

Donna – The toxics in reality are on a 24 hour composite, so you don't know what happened in any one hour.
Paul – Right and we mostly have been having daily stream flow values so we don't really know.
William Schroeder – Okay let me put it this way. I was talking to an EPA fellow about salt and EPA, DES and DOT are all monitoring salt concentrations in lakes and streams in certain areas of New Hampshire and they are measuring it on 15 minute intervals, and they find situations where the salt concentrations spike way high for a few hours and then it drops down again. So if the understanding is that then this is where it starts to get confusing, were you talking for a 24 hour average because in 24 hours maybe that spike was a lot lower, maybe we didn't have an acute variation. The understanding I got out of it was no, if for one hour the concentration was above this level that was an exceedence. If that happens 5 times in one day is that 5 exceedences or is that one exceedence. I don't know the answer to that one. What I am saying is it gets a little confusing between the levels which is considered either an aquatic life criteria (chronic aquatic life criteria) and how often do you let it happen? I think that needs to be clear.
Paul - You are right.
Donna – You also can't write a standard for something that you aren't going to find a way to do the analysis for, to do the sampling that is appropriate. If you are going to write that kind of a standard then it almost means that you have to put into the permit that kind of measuring.
Paul – There aren't too many things like chloride where it isn't that easy to do.
Bill – That is just a case where again we are applying the criteria as written, and the discharger, if you will, will get a bit of a break.
Paul – We should write the words to be accurate to the criteria.
Bill – I think the criterion should be stated correctly and the one hour averaging period for acute toxicity for a lot of the toxics for the "fast acts" of acting toxics assure in a 48 hour, 96 hour, no matter how far you may run out with an acute test, a short initial exposure to a high enough concentration will get you the effect without continued exposure.
Comment - Dead is dead.
Donna – It just isn't that the whole criteria is a bad idea, it just doesn't make sense to write in something unless you have the intent of following up to see if on an hourly basis or on a 15 minute basis there is going to be a compliance.
Paul – We will have to discuss it and get back to you. I think that in general for toxics we said one day is close enough because we just don't have the data.

Comment – Even the one day you are not going to meet. You are not going to test for; you are not going to test every day of the week.
Paul – But you could probably estimate that.
Donna – But you could at least have had the chance of doing a one day as opposed to a 15 minute.

- **Marjory –** Paul suggested that we defer the water quality assessments until next time, is that correct? I see Gregg is nodding. So the Water Quality Assessments will be on the next agenda.

- **Paul –** The draft 303(d) list and 305(b) report are on the web. They are similar in format to last year. If you want to comment on it or give us additional input now is the time. Gregg will give you the overview next time.

Other Business

Next Meeting –

May 10th at 1:30 PM

Vern Lang – Marjory one more point. On the toxics list, Paul, for the increase in the mass loading you indicated (if I heard you right) that it would fall to the antidegradation review process. I thought I also heard you say that you have never yet flushed it out and held that review process within the form that it had been , etc. that increase in mass loading, is that correct?
Paul – Yes that is correct.
Vern – Would it be possible for you to make a stab at flushing out what those steps are before the next meeting?
Paul – How about for the meeting after the May 10th meeting, we are working on that but basically I am the process and it will require more details than is in the standards.
Vern – The reason I see for this is that they go hand in hand, I would hate to have to make a judgment on this on this toxic thing without knowing what sort of a process you are going to have available for considering it, antidegradation and such.

- Marjory – Do I have a motion to adjourn
  Donna Hanscom made a motion to adjourn, motion seconded, all in favor.

Meeting Adjourned

Adjourned at 3:30 pm